

to anneal to one of said plurality of primers over part of the length of said single stranded nucleic acid molecule and then extending that primer using the annealed single stranded nucleic acid molecule as a template, so as to provide an extended immobilized nucleic acid strand;

C) separating the target nucleic molecule from the extended immobilized nucleic acid strand;

E1
D) allowing the extended immobilized nucleic acid strand to anneal to one of said plurality of primers referred to in step A) and then extending that primer using the extended immobilized nucleic acid strand as a template, so as to provide another extended immobilized nucleic acid strand; and optionally,

E) separating the annealed extended immobilized nucleic acid strands from one another,

wherein said first nucleic acid sequence hybridizes to one of said plurality of primers and said second nucleic acid sequence is complementary to a sequence which hybridizes to one of said plurality of primers,

wherein said first and second nucleic acid sequences are provided at the 3' and 5' ends of said single-stranded target nucleic acid molecule.

E2
4 (Twice Amended). A method according to claim 1 wherein said first nucleic acid sequence hybridizes to one of said plurality of primers and said second nucleic acid sequence is the same as the sequence of one of said plurality of primers.

E3
6 (Amended). A method according to claim 1, wherein a tag is also ligated to the given nucleic acid sequence, said tag enabling amplification products of the given nucleic acid sequence to be identified.

E4
8 (Amended). A method according to claim 1, wherein the plurality of primers comprises at least two different types of primers, one type having a different sequence from another type.

9 (Amended). A method according to claim 8, wherein the plurality of primers consists of 2^n different types of primers; wherein n is an integer.

E5 13 (Twice Amended). A method according to claim 1, wherein the primers are located in a predetermined arrangement.

E6 18 (Twice Amended). A method according to claim 1, wherein said primer extension results in the incorporation of one or more detectable labels into extended immobilized nucleic acid strands.

19 (Twice Amended). A method according to claim 1, further including the step, after step (E), of treating one or more extended immobilized nucleic acid strands so as to release a nucleic acid molecule or a part thereof.

E7 23 (Amended). A method according to claim 1, when used to amplify a plurality of different given nucleic acid sequences, each such given sequence being a part of a target nucleic acid molecule.

24 (Amended). A method according to claim 23, when used to amplify a plurality of different given nucleic acid sequences simultaneously, each such given sequence being a part of a target nucleic acid molecule.

25. A method according to claim 23, wherein said different given nucleic acid sequences are each provided with a first and second nucleic acid sequence, said first and second nucleic acid sequences being the same for the each of the different single stranded nucleic acid target molecules comprising said given nucleic acid sequences.

Please add the following new claims:

E8 67 (new). A method according to claim 4, further comprising:

F) using at least one extended immobilized nucleic acid strand to repeat steps D) and E), so as to provide additional extended immobilized nucleic acid strands and, optionally,

G) repeating step F) one or more times.

68 (new). The method of claim 1, where the target nucleic acid molecule is provided in step (A) by providing a given nucleic acid sequence to be amplified, and providing said first

and second nucleic acid sequences as separate molecules, and ligating said first nucleic acid sequence and said second nucleic acid sequence to said given nucleic acid sequence, to form said target nucleic acid molecule.

69 (new). The method of claim 1, where a plurality of given nucleic acid sequences are to be amplified, and said given nucleic acid sequences, are provided by a sample comprising a plurality of different given nucleic acid sequences, the method obtaining, for each given nucleic acid sequence, a target nucleic acid molecule comprising said given nucleic acid sequence.

70 (new). The method of claim 13 in which the arrangement is a grid pattern.

71 (new). The method of claim 18 in which the labels are fluorescent labels or radiolabels.

72 (new). A method of amplifying all nucleic acid sequences in a sample which comprises providing a sample comprising a plurality of different given nucleic acid sequences, and providing, for each target nucleic acid molecule, primers suitable for amplifying the given nucleic acid sequence which said molecule comprises, and then amplifying the target nucleic acid molecules, and hence the given nucleic acid sequences, by the method of claim 1, thereby amplifying all nucleic acid sequences in said sample.

73 (new). The method of claim 71 in which the first and second nucleic acid sequences are the same for each of the target nucleic acid molecules.

REMARKS

1. General Matters

1.1. As a result of this amendment, claims 1, 2, 4, 6-26, 59-64, and 67-73 are pending, with claims 59-64 withdrawn from consideration. Claim 1 has been amended to incorporate the limitations of 3 and 5, which in turn have been cancelled. Claims 4, 6, 8, 9, 13, 18, 19 and 23-25 have also been amended. Claims 67-73 are new.